QUICK INSTALLATION GUIDE

WIRELESS N300 / N150 EXTENDER

MAKING CONNECTIONS easy

N300 Series
ENXWI-2AN4x
(with 2 antennas)

N150 Series
ENXWI-1AN4x
(with 1 antenna)

Note:
The lowercase "x" in the model number represents the antenna type. At the time when this manual was written, Encore offers 2 different types of antenna for Wireless N Extender: 2dBi and 5dBi. The antenna shown on the cover is 2dBi. The 5dBi antenna is longer.

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Chapter 1: Introduction

The Wireless N300 / N150 Extender connects wired or wireless devices to an existing network. It expands the boundaries of a wired or wireless local area network (LAN) literally by repeating or extending access point signals thereby eliminating dead spot problems and expanding network range.

The Extender has four operation modes:

- **AP Mode** – In AP mode, the Extender is used as an access point of wireless clients with its own wireless network or network name (SSID) that clients connect to. The Extender performs tasks that routers do, such as network sharing and broadcasting its SSID.
- **Repeater Mode** – In Repeater mode, the extender works like a bridge between a wireless router and a wireless client outside the router's range. The Extender adapts the network name (SSID) of the wireless router that it is connected to.
- **WDS Mode** – In WDS (Wireless Distribution System) mode, the Extender enables interconnection of two or more access points (APs). To use WDS, the access points must support WDS function and must be configured with the same SSID and WEP key.
- **AP + WDS Mode** – In AP + WDS mode, the Extender acts as the access point to two access points. An SSID is configured for the Extender. A wireless client connects to the network using the Extender SSID.

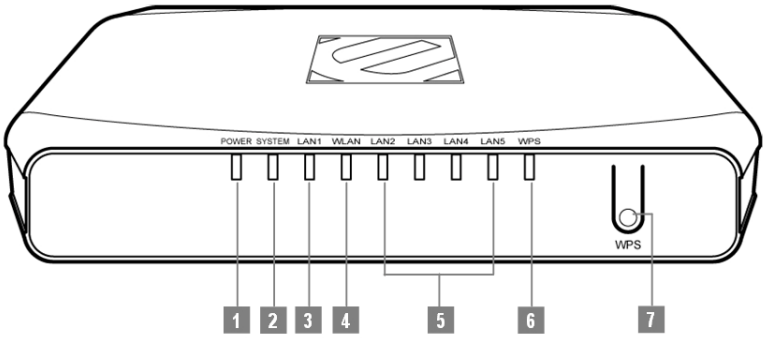
1.1 Package Contents

- Wireless N300 / N150 Extender x1
- External Antenna x 2 (for N300 Series)
  x 1 (for N150 Series)
- Power Adapter x 1
- RJ-45 Ethernet Cable x 1
- Setup CD (User Manual in the CD) x 1
- Quick Installation Guide x 1

1.2 System Requirements

- Active wired or wireless network
- 10/100 Ethernet cables with RJ-45 connector
- Ethernet or wireless enabled computers
- TCP/IP protocol must be installed on the connecting computers
- Web browser: Internet Explorer 7 or later, or Mozilla Firefox 3 or later

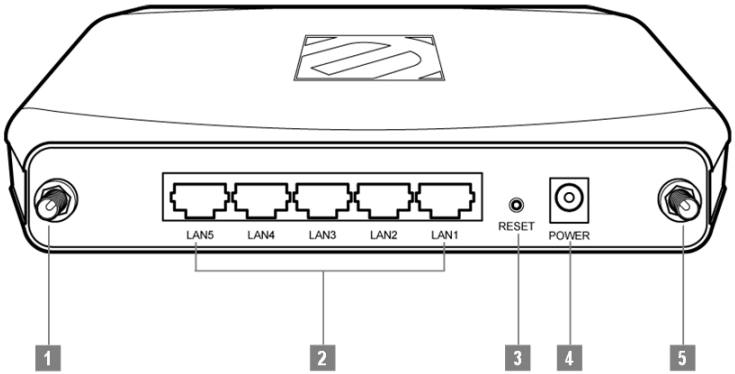
1.3 Front Panel



Note: When the Extender is turned on, the *POWER* LED lights up and the *SYSTEM* and *WPS* LEDs stay on for 8 seconds to indicate that the system is starting up.

Item		Status	Description
1	**POWER LED**	On	The Extender power is on.
		Off	The Extender power is off.
2	**SYSTEM LED**	Slow Blinking	The Extender is ready to work.
3	**LAN LED (1)**	On	LAN port is successfully connected.
		Blinking	The Extender is sending or receiving data over the wired network.
4	**WLAN LED**	Slow Blinking	Wireless network is ready.
		Blinking	The Extender is sending or receiving data over the wireless network.
5	**LAN LED (2/3/4/5)**	On	LAN port is successfully connected.
		Blinking	The Extender is sending or receiving data over the wired network.
6	**WPS LED**	Off	The WPS PBC/PIN function is not running.
		Slow Blinking	The WPS PBC function is enabled. Turns off after 2 minutes when no connection is established.
7	**WPS Button**		Press and hold for 3 seconds to enable the WPS (Wi-Fi Protected Setup) function.

1.4 Back Panel and Connectors



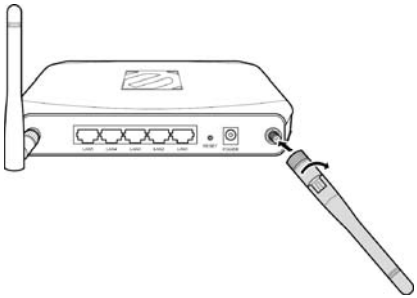
Note: The number of antenna connectors differs per model. The N300 Series has two antenna connectors (items 1 and 5), while the N150 Series only has one (item 1).

	Port / Button	Description
1	**R-SMA Connector**	Attach the external antenna.
2	**LAN (1/2/3/4/5) Ports**	Connect wired network and devices, such as a computer, NAS, IP camera, print server, switch, and access point, using RJ-45 Ethernet cables.
3	**Reset Button**	Press and hold the **Reset** button for 6 seconds to restore the Extender to its default settings. ***Note:*** • Use a pointed object such as a pen or a paper clip to press the button. • Using the reset function overrides all user-defined settings. If you are experiencing problems with the Extender, perform other troubleshooting methods first or reset using the web-based configuration utility. Resetting the Extender should be the last resort.
4	**POWER Jack**	Connect the supplied power adapter. ***Note:*** Use only the supplied power adapter. Using power adapters not recommended by the manufacturer may damage the Extender or the connected devices.
5	**R-SMA Connector**	Attach the second external antenna. ***Note:*** This port is available only in N300 Series.

Chapter 2: Connecting the Extender

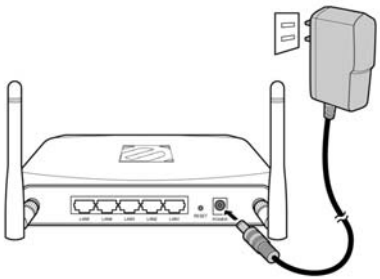
2.1 Setting Up the Extender

1. Attach the antenna(s) to the R-SMA connector(s) at the back of the Extender.



Note: The number of antennas varies depending on model.

2. Position the antenna(s) for proper placement.
3. Connect the power adapter to the power jack of the Extender and then plug the power adapter to a power outlet.



4. Connect a host computer to access the web-based configuration utility.

Note: For initial configuration, it is recommended to connect the host computer to the LAN port with an Ethernet cable, see “Connecting Wired Devices” on page 7.

Or, to connect a computer wirelessly, search and connect to the Extender default network:

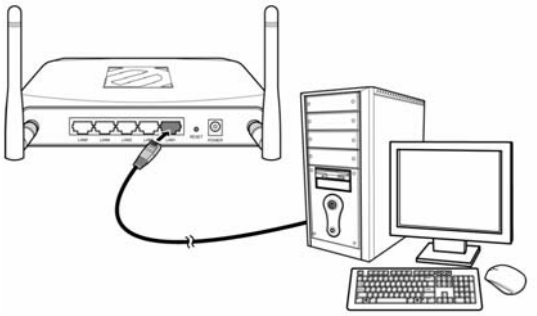
- **Network name (SSID): default**
- **Security: disabled**

5. After connecting the host computer, configure the computer to be able to access the web-based configuration utility, see “Accessing the Web-based Configuration Utility” on page 8.

2.2 Connecting Wired Devices

Use the LAN ports to connect wired devices such as computers, printers, and Ethernet-enabled game consoles to the Extender.

Connect one end of an Ethernet cable to the LAN port of your device and the other end to one of the LAN ports of the Extender.



2.3 Checking the Connections

To ensure the Extender and all other connected devices are working properly, check the LED indicators. For basic connection, the following LED must be lit:

- Power LED
- System LED (blinking)
- LAN LED (for every device connected via Ethernet)

Chapter 3: Configuring the Extender

To configure the Extender, you must configure the host computer first and then access the web-based configuration utility.

3.1 Configure the Host Computer

Before you begin, the **Internet Protocol (TCP/IP)** settings of the host computer must be configured properly to access the Web-based Configuration Utility. Configurations are as follows:

IP Address	**: 192.168.10.xxx** (where xxx is a number between 100 ~ 199)
Subnet Mask	**: 255.255.255.0**

Note: See “Chapter 3: Configure the Host Computer” of the User Manual for detailed configuration information per operating system.

3.2 Accessing the Web-based Configuration Utility

Take note of the following default settings.

SSID	**:**	**default**
Channel	**:**	**6**
Security	**:**	**Disable**

3.2.1 Login

You need a web browser to access the web-based configuration utility.

1. Open a web browser.
2. Type the following URL on the address bar:

http://192.168.10.1

Sample Screenshot from Internet Explorer

3. The login screen prompts you for a **User Name** and **Password**.

Enter the default access information as follows:

User Name	**:**	**admin**
Password	**:**	**admin**

Connect to 192.168.10.1
The server 192.168.10.1 at Encore requires a username and password.
Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection).
User name:
admin
Password:
Remember my password
OK
Cancel

Note: The login screen varies depending on your web browser and the host computer operating system.

3.2.2 Encore Setup Wizard

Encore Setup Wizard helps you to configure the Extender quickly. Follow the step-by-step instructions to run the wizard.

1.

To access the Setup Wizard, click **Wizard** at the bottom of the menu.

2.

The Setup Wizard overview page is displayed.

Click **Next** to continue.

3.

On **Password** and **Verify Password**, enter desired password for the Extender web-based configuration utility.

Click **Next** to continue.

4.

Leave the **LAN IP Address** and **LAN Subnet Mask** to their default settings.

By default, **DHCP Server** is ***"Disabled"***. In most cases, the wired router assigns an IP address to the Extender when it connects to the network, so it is recommended to leave the **DHCP Server** ***"Disabled"***.

Otherwise, select **DHCP Server** ***"Enabled"***, then enter the IP range in **Range Start** and **Range End**.

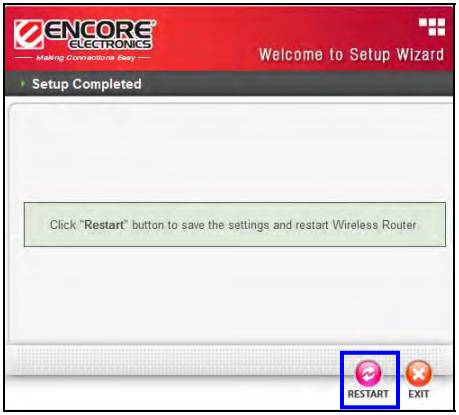
Click "***Next***" to continue.

5.

Enter a name for your wireless network on **SSID** and select a radio channel in **Channel**. These will be used by networking devices to connect to the Extender.

Click **Next** to continue.

6.



The Setup Wizard is now completed. The new settings will take effect after the Extender reboots.

Click **Restart** to reboot the Extender. If you do not want to make any changes, click **Exit**.

7.

When this window appears, click **CLOSE** to close the wizard.

3.3 Basic Settings

After you log in to the web-based configuration utility, the **System > Device Information** screen is displayed.

On the menu panel, click **Wireless > Basic** to open the Basic screen and select the Extender operation mode.

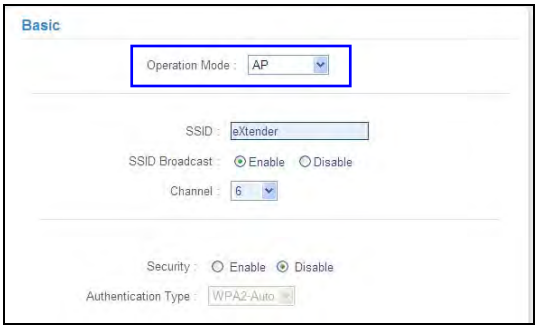
The required parameters on this screen vary depending on the selected operation mode.

Operation Mode — Select an operation mode:

- **AP** (Access Point): The Extender works as an access point for clients in the wireless network. See ”AP Mode” on page 14.
- **Repeater**: The Extender repeats the signal from a wireless router for clients outside the router range. See “Repeater Mode” on page 16.
- **WDS** (Wireless Distribution System): The Extender connects two or more access points. See “WDS Mode” on page 18.
- **AP + WDS**: The Extender acts as the access point to two or more access points that are connected in a WDS. See “AP + WDS Mode” on page 20.

3.3.1 AP Mode

In **AP** (Access Point) mode, the Extender acts as an access point with its own SSID and allows wireless clients to view and connect to the Extender.



SSID — Enter a network name that you want to assign to the Extender. This is the name that a wireless client searches for to connect to the wireless network via the Extender.

SSID Broadcast — Select ***Enable*** to allow wireless clients to view the SSID of the Extender. Select ***Disable*** to hide the SSID.

Channel — Select a transmission channel for wireless communications. The channel of any wireless client must match the channel selected here to access the network via the Extender.

Security — When enabled, users are prompted to enter a security key to be allowed access to the wireless network.

Authentication Type — Select the type of security to use: WEP, WPA, WPA2, WPA2-Auto.

A. WEP

With WEP (Wired Equivalent Privacy), wireless clients must enter the same key to connect to the wireless network.

Select one of the following:

- **Open System**: Allows public access to the Extender via wireless connection but requires users to enter the same WEP key to send and receive data from the AP.
- **Share Key**: Requires users to enter the same WEP key.
- **Auto**: Select “Auto” if you are unsure which authentication is suitable for your

wireless device.

WEP Key Format — Select a security key format:

- **HEX:** To enter a security key using the characters 0~9, A~F, a~f.
- **ASCII**: To enter a security key in alphanumeric format.

WEP Key Length — Select an encryption length:

- **64-bit**: To enter a 10-character security key.
- **128-bit**: To enter a 26-character security key.

WEP Key — Enter desired security key.

B. WPA / WPA2 / WPA2-Auto with PSK

WPA / **WPA2** / **WPA2-Auto** provides a more secured encryption. If **PSK** is selected, the screen below appears:

Encryption Type — Select **TKIP**, **AES**, or **Auto** encryption.

Note: TKIP is available for B or G WLAN band only. The WLAN Band setting is under **Wireless > Advanced** menu.

Passphrase and **Confirmed Passphrase** — Enter a passphrase with at least 8 characters.

C. WPA / WPA2 / WPA2-Auto with EAP

Select **EAP** (Extensible Authentication Protocol) if a Radius server is connected in the wireless network.

Encryption Type — Select **TKIP**, **AES**, or **Auto** encryption.

Note: TKIP is available for B or G WLAN band only. The WLAN Band setting is under **Wireless > Advanced** menu.

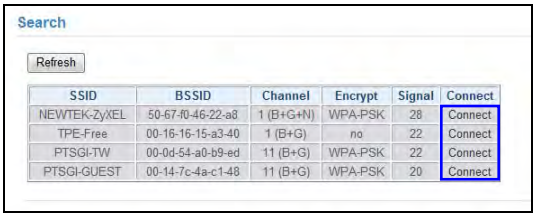
Radius Server 1 — Enter the following information:

- **IP Address**: The IP address of the authentication server.
- **Port**: The port number used to connect to the authentication server.
- **Shared Secret**: The secret passphrase to connect to the authentication server.

3.3.2 Repeater Mode

In **Repeater** mode, the Extender repeats an access point signal and sends it to wireless clients outside the access point range. The Extender uses the SSID of the access point.

1. Click the **Search** button to search for an access point. A window appears with a list of available access points.



2. Click **Connect** of the corresponding access point.

   The current access point settings and information are displayed on the screen. The information varies depending on its settings. Do not change the values of the following:

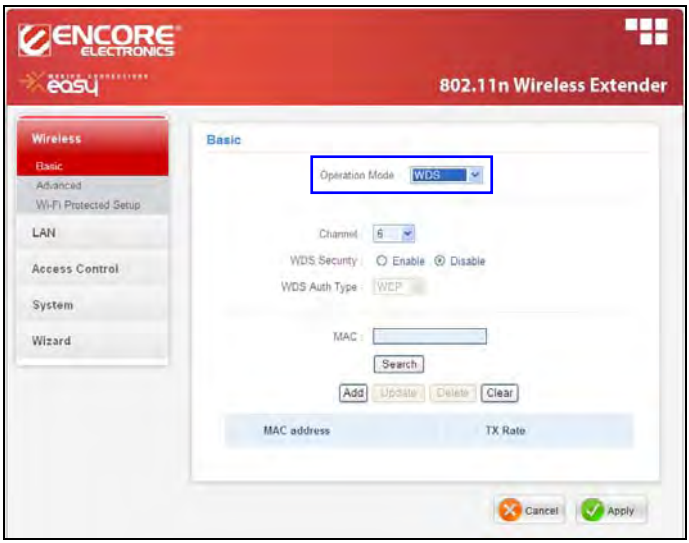
   - **SSID**
   - **Channel**
   - **Security**
   - **Authentication Type**

- **Encryption Type**
- **PSK / EAP**

3. Enter the security key of the selected access point. The screen varies depending on the access point authentication type.
    - If the access point security setting is WEP, enter the **WEP Key**.
    - If the access point security is WPA / WPA2, enter the passphrase in **Passphrase** and **Confirmed Passphrase**.
4. Click **Apply** to save and apply the configuration.

3.3.3 WDS Mode

In **WDS** (Wireless Distribution System) mode, the Extender connects one or more access points by their MAC address. When a wireless client belonging to one access point moves out of its access point range, the wireless client automatically connects to the other access point within the WDS. Its wireless network signal continues without interruption.



Channel — Select a transmision channel for wireless communications. The channel of any wireless client must match the channel selected here to access the network via the Extender.

WDS Security — Select **Enable** to prompt users to enter a security key before allowing access to the wireless network.

WDS Auth Type — Select the type of security to use: **WEP** or **WPA2**.

A. WEP

With WEP (Wired Equivalent Privacy), wireless clients must enter the same key to connect to the wireless network.

WEP Key Format — Select a security key format:

- **HEX:** To enter a security key using the characters 0~9, A~F, a~f.
- **ASCII**: To enter a security key in alphanumeric format.

WEP Key Length — Select an encryption length:

- **64-bit**: To enter a 10-character security key.
- **128-bit**: To enter a 26-character security key.

WEP Key — Enter desired security key.

B. WPA2

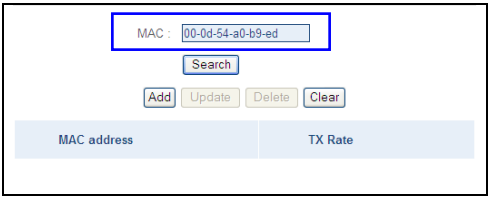
WPA2 provides a more secured encryption.

Passphrase and **Confirmed Passphrase** — Enter a passphrase with at least 8 characters.

To add access points in the WDS, do the following:

1. Click the **Search** button to search for access points. A window appears with a list of available access points.

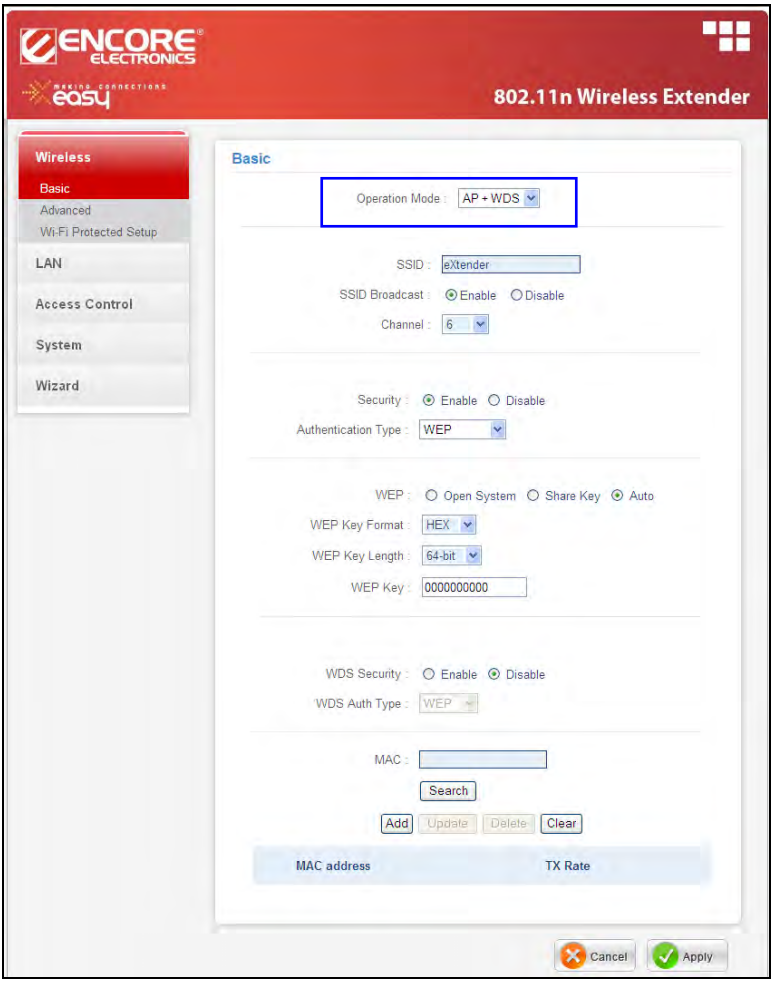
2. Click **Connect** of the corresponding access point. The MAC address is shown on **MAC**.



3. Click the **Add** button to add the access point to the WDS. The Extender reboots for settings to take effect.
4. Repeat the above steps to add more access points.

3.3.4 AP + WDS Mode

In **AP + WDS** mode, the Extender acts as the access point of the WDS with its own SSID. Wireless clients can view and connect to the WDS via the Extender.



SSID — Enter a network name that wireless clients can view and connect to.

SSID Broadcast — Select ***Enable*** to allow wireless clients to view the SSID of the Extender. Select ***Disable*** to hide the SSID.

Channel — Select a transmission channel for wireless communications.

Security — When enabled, users are prompted to enter a security key to be allowed access to the wireless network.

Authentication Type — Select the type of security to use: ***WEP***, ***WPA***, ***WPA2***, ***WPA2-Auto***.

A. WEP

With WEP (Wired Equivalent Privacy), wireless clients must enter the same key to connect to the wireless network.

Select one of the following:

- **Open System**: Allows public access to the Extender via wireless connection but requires users to enter the same WEP key to send and receive data from the AP.
- **Share Key**: Requires users to enter the same WEP key.
- **Auto**: Select ***Auto*** if you are unsure which authentication is suitable for your wireless device.

WEP Key Format — Select a security key format:

- **HEX:** To enter a security key using the characters 0~9, A~F, a~f.
- **ASCII**: To enter a security key in alphanumeric format.

WEP Key Length — Select an encryption length:

- **64-bit**: To enter a 10-character security key.
- **128-bit**: To enter a 26-character security key.

WEP Key — Enter desired security key.

B. WPA / WPA2 / WPA2-Auto with PSK

WPA / **WPA2** / **WPA2-Auto** provides a more secured encryption. If **PSK** is selected, the screen below appears:

Encryption Type — Select ***TKIP***, ***AES***, or ***Auto*** encryption.

Note: TKIP is available for B or G WLAN band only. The WLAN Band setting is under **Wireless > Advanced** menu.

Passphrase and **Confirmed Passphrase** — Enter a passphrase with at least 8 characters.

C. WPA / WPA2 / WPA2-Auto with EAP

Select **EAP** (Extensible Authentication Protocol) if a Radius server is connected in the wireless network.

Encryption Type — Select ***TKIP***, ***AES***, or ***Auto*** encryption.

Note: TKIP is available for B or G WLAN band only. The WLAN Band setting is under **Wireless > Advanced** menu.

Radius Server 1 — Enter the following information:

- **IP Address**: The IP address of the authentication server.
- **Port**: The port number used to connect to the authentication server.
- **Shared Secret**: The secret passphrase to connect to the authentication server.

WDS Security — Select ***Enable*** to prompt users to enter a security key before allowing access to the wireless network.

WDS Auth Type — Select the type of security to use: ***WEP*** or ***WPA2***.

D. WEP

With WEP (Wired Equivalent Privacy), wireless clients must enter the same key to connect to the wireless network.

WEP Key Format — Select a security key format:

- **HEX:** To enter a security key using the characters 0~9, A~F, a~f.
- **ASCII**: To enter a security key in alphanumeric format.

WEP Key Length — Select an encryption length:

- **64-bit**: To enter a 10-character security key.
- **128-bit**: To enter a 26-character security key.

WEP Key — Enter desired security key.

E. WPA2

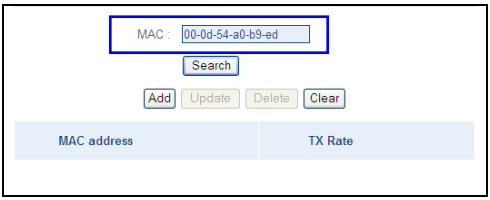
WPA2 provides a more secured encryption.

Passphrase and **Confirmed Passphrase** — Enter a passphrase with at least 8 characters.

To add access points in the WDS, do the following:

1. Click the **Search** button to search for access points. A window appears with a list of available access points.

2. Click **Connect** of the corresponding access point. The MAC address is shown on **MAC**.



3. Click the **Add** button to add the access point to the WDS. The Extender reboots for settings to take effect.
4. Repeat the above steps to add more access points.

Chapter 4: Technical Support

For detailed product information or configuration, check the User Manual in the CD-ROM that came with the Extender.

For software updates, product registration, or to download the latest documentation, check our website http://www.encore-usa.com.

For technical related issues or inquiries, call the local technical support number in your area. Or, visit our website for more details.